DESCRIPTION OF CHATSWORTH.

This mansion, magnificent as regards its internal arrangements, and the splendid demesnes which surround it, and now for the second time rendered remarkable by the presence of a Queen, was among the domains originally given by William the Conqueror to William Peverill, one of his attendants, but it afterwards passed into the noble family of Cavendish. The present building was designed by William Talman, comptroller of the works in the reign of William the Third, but the whole extent of his plan has only been carried out by the present duke and his predecessor.

Chatsworth was for some time the residence or prison of Mary Queen of Scots, a circumstance which caused her name to be given to a suite of apartments in this building. The house was also the residence of Marshall Tallard, who was taken prisoner by the Duke of Marlborough at the battle of Blenheim. On taking leave of the Duke of Devonshire, with the happy politeness of his nation, he said, "When I reckon up the days of my captivity in England, I shall leave out all those I have spent at Chatsworth."

The chapel at Chatsworth boasts the masterpiece of Verrio.

The orangery is 180 feet long, 27 wide, and 21 feet high. Some of the trees were selected from the fine orangery of the Empress Josephine at Malmaison. There is a specimen of rhododendron arboreum, one of which bore upwards of 2,000 flowers in the summer of 1840. At the northern end of the orangery there is a communication with the baths and ball-room, and over them is an open temple, which commands very extensive prospects.

The water-works and the great cascade were designed by a French engineer, situated to the south and south-east end of the house, and where, on playing, a vast body of water rises from a square building, surmounted by a dome ornamented by dolphins, sea nymphs, &c., through which it falls into a basin, and then descends a series of 24 ledges for about 300 yards, when the stream disappears amidst masses of rock, and passes beneath the lawns to the river. The "willow tree" consists of a series of *jets d'eau*, the pipes of which are in the form of a decayed tree; one of the fountains throws up the water ninety feet.

The grand conservatory is 300 feet long by 145 feet wide. The elevation of the central cove or arched roof is 67 feet, with a span of 70 feet, resting on two rows of iron pilasters 28 feet high, dividing the building. The interior comprises an area of about an acre, in the centre of which is a carriage road, the plants being ranged on either side. The tubes for hot water are six miles in length. A perfect view of the whole interior is obtained from a circular gallery at the base of the dome, the access to which is by a series of rustic steps amidst arches of rock-work. A tunnel surrounds the whole building, for the purpose of obtaining access to the stoves and pipes for conveying water.

During the Queen's visit to Chatsworth, the interior of the conservatory was illuminated by 12,000 lamps of all descriptions, 11,000 being variegated. The *ensemble* of the interior was a complete realization of some of the gorgeous and enchanting scenes described in the "Arabian Nights," and no words could convey an appreciation of the effects produced by the novel and dazzling brilliancy of the different coloured hues imparted by the mode of illumination adopted. The *coup d'œil* was superb. The cascade was lighted on either side to its source at the top of the mountain by 500 Russian flambeaux, and the several fountains and *jets d'eau* in the gardens and terraces were illuminated at dark. The orangery, with its exquisitely sculptured reliefs hung with Chinese lanterns, and otherwise lighted by additional lamps, contributed to carry out the illusion of some oriental tale of enchantment and princely luxury, hardly compatible with our northern notions or chilly clime.

WHITEHALL.—According to the intention of its royal founder, and the plan of Inigo Jones, this palace would have occupied 24 acres. It was to have extended 874 feet along the side of the Thames, and the same length towards St. James's Park, presenting one front to Charing Cross, of 1,200 feet long, and another, the principal, of similar dimensions towards Westminster Abbey.

ARCHITECTURAL COMPETITIONS.

TO THE EDITOR OF THE BUILDER.

SIR,—By your fearless exposure of the various abuses which have crept into the building system, you are doing an essential service not only to the profession generally, but to the community itself, the honour of the one and the interest of the other being both deeply involved in the matter. A correspondent, in your journal of the 2nd inst., powerfully advocates the formation of a builders' society, which, he contends, if founded upon certain fixed and equitable principles, would have the effect of checking that increasing mania for competition among a certain class of builders, who recklessly and indiscriminately enter into contracts upon terms far inadequate to cover the original cost of the materials and labour employed. The inevitable result of acting upon such a system is ruin to the contractor, loss to the merchants and others with whom he has dealt, and injury to the mechanic and the labourer, by forcing upon them reduced and inadequate wages.

Nor is this all, the master builder is too often subject to bad debts and actions at law, arising either from the tyranny of the architect employed, or from the rigid and impartial enforcements of some despotic, capricious, or ill-defined clause in the specification, or from some disputed accounts relating to alterations from the original drawings. The crying evils to which I have referred are not confined to one class of building engagements only, but to all. The contracts for churches, hospitals, workhouses, and, indeed, almost every other description of public building erected upon the *cheap* principle, present the same hideous features of deception and dishonesty, over-reaching cunning, and cruel desperism, which bring in their train certain ruin, more especially those indeed the work of men who, to use your own significant phraseology, "are thrust forward, or thrust themselves forward, to shew their skill in cutting and paring down before the contract is made, reducing the builder's estimate to the lowest possible straining of his credulity and confidence, and afterwards enforcing and watching to the turn of a screw or the driving of a nail."

The Worthing new church building transaction, of which you have furnished so ample a report, will, we trust open the eyes of every master builder in the country, who wishes to maintain a character for honesty among his fellow men, and evince a due regard for the honour and prosperity of the profession to which he belongs.

The experienced practical builder, in addition to the evils already adverted to, has to combat with the puppyism, self-sufficiency, and practical inefficiency of beardless architects, who are too frequently chosen by building committees, not as they ought to be, principally from the excellency of their qualifications, but from the personal influence of family connections. Hence the many glaring blunders which disgrace some of our large public and private buildings; hence the accidents attended with loss of life, which have occasionally occurred, owing to the defective principles used in the formation of certain works which have given way. We admit that this censure does not apply to the general mass of architects in this country, than whom a more useful, honourable, and better educated class of men probably does not exist. The mis-deeds and the mischiefs of the would-be architects of the day are unhappily not confined to this country, for we find by your journal of the 25th ult. that our Gallic neighbours are infested with a similar species of nuisance, as will be seen in the article announcing that the Tribunal of Valenciennes has recently severely fined an architect, through whose ignorance and presumption the splendid Gothic tower in that city fell to the ground, by which accident several persons were killed or wounded. He had been previously warned of the unsafety of the building by a man more skilled in the building art than himself; the warning was disregarded, the edifice was *tinkered* by the self-sufficient architect himself, who had scarcely finished his task, and pronounced the tower to be perfectly secure, ere it fell to the earth and was entirely demolished. A somewhat similar accident *might* possibly have occurred to a large public edifice within our own country, but for the timely interference of the practical builder employed in its erection.

I am, Mr. Editor, yours truly,
A PRACTICAL BUILDER.

[We have read the communication of our correspondent "A Practical Builder," with much attention, and regret that the very great space it would occupy prevents us inserting it entire.]

RABY CASTLE.—The Duke of Cleveland is about to enlarge, by additional wings, this splendid baronial seat, from designs by an architect from Edinburgh.—Sun.

ROYAL SCOTTISH SOCIETY OF ARTS.

At the annual general meeting of the Royal Scottish Society of Arts, recently held—James L'Amy, Esq., of Dunkenny, F.R.S.E., president, in the chair—the following, among other prizes, &c. were awarded by the society:—

To Mr. William Gale, F.R.S.S.A., civil engineer, Glasgow, for his "Remarks on the Utility and Defects of the Moveable Jib Crane, according to its present construction in Glasgow; with proposed Improvements to obviate its defects," with drawings and models. Read and exhibited 13th March, 1843. (975.) The society's silver medal, value five sovereigns.

To Mr. Charles H. Wilson, A.R.S.A., V.P.R.S.S.A., Director of the School of Design, Somerset House, London, for his "Observations on the Decorative Arts in Germany and France, and on the Causes of the Superiority of them as contrasted with the same Arts in Great Britain; with suggestions for the Improvement of Decorative Art." Read, and specimens in illustration exhibited, 24th April, 1843, and printed in the society's Transactions. (995.) The society's honorary silver medal.

To Mr. Alexander Mitchell, watch and clock maker, Glasgow, for his "Description of an improved Water Meter." Read, and the Meter exhibited, 12th December, 1842, and printed in the society's Transactions. (945.) The society's honorary silver medal.

To Messrs. Thomas Shanks & Co. engineers, Johnstone, Renfrewshire, for their "Specimens of Screwed Bolts, as executed on their new Lathe, as cheap or cheaper than Bolts screwed by Dies." Communication read and bolts exhibited, 13th February, 1843. (963.) The society's honorary silver medal.

SKEW ARCH.

TO THE EDITOR OF THE BUILDER.

SIR,—A subscriber to THE BUILDER has asked of me some questions concerning the skew arch that you were so kind as to publish in No. 41. I shall answer the subscriber to the best of my ability, but it is sadly impaired. my memory is bad, and should the answer not prove correct, I hope that some kind reader will correct it for me. Now, to the first question,—"Of what use is the section I from a to a on arch development?" *Question second.*—"Would not a section on the same line on the cylinder development be the true curve of the rules for the soffit?" The first question would be answered by the second. Now, I believe, when I view and measure the diagrams over again, that the line on the cylinder development is the correct curve, at least as far as I see the thing at present. I believe I was in error before, but then as to the use of getting such a section, it was to make the rules *h h* from. The next question is—"Of what use is the twisted rule, and in what manner is it found from the twist of beds marked *M f*" I have made another diagram or two shewing the use of the twisted rule, and how the mason applies it on the stone. The rule is ¾ of an inch wider at 12 inches from the end (say the narrow end of the rule to be 3 inches, then at 13 inches it will be 3¾ inches, and at 2 feet will be 1½ inches wider, and so on). In the figure F, I have made the divisions; they are the same as on the plate in No. 41 of THE BUILDER, and I believe that to be a correct method of getting the twist of the beds—at least I know no other,—and should that not prove correct. I shall be obliged to him that will set me right. The twisted rule and parallel rules marked A are put on the quoin at 2 feet distant from the soffit, but not sunk into the bed, but only the twisted rule and parallel rule marked B; the twisted rule shews it is sunk on the bed from *a* to *a*, and by taking over the top of the two rules B, they will be found to be out of twist, while, by taking over the rules A A, they will be found to twist 1½ inches in two feet.

In the common arch stone marked D, that also shews the rule sunk into the bed from *a* to *a*, or until you bring the tops of the two rules to be out of twist. In the stone marked E is shewn the sinking of the bed a little at the two low corners marked *o o*, which does not cause so much waste on the first bed, but it is still the same twist. The figure C shews the face of an arch stone, with the twist at 2 feet back, denoted by the dotted lines *c c c c*. I have enlarged the stones, to make them the clearer to understand, and now, having answered this, I do not think I can explain any further; but should any other, or the same subscriber, ask for further explanations, it is my duty to do my best towards it.

Your humble servant,
G. S.